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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/916,247 | 07/30/2001 | Pierre Cote | 4320-347 | 9131 |

7590 05/16/2003
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EXAMINER

MENON, KRISHNAN S

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|----------|--------------|
| ART UNIT | PAPER NUMBER |
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1723

DATE MAILED: 05/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/916,247

Applicant(s)

COTE ET AL.

Examiner

Krishnan S Menon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Claims 26-30 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 26-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al (US 5,403,479).

Smith (479) teaches a process of filtering water containing solids by immersing a membrane in a tank containing the water and providing a trans-membrane pressure for the filtration (Fig 2,7; col 15 line 63-col 16 line 10), with the permeate side connected to permeate outlet (line 22, and tank 27, fig 2), the membrane aerated (col 16 lines 20-25), backwashing the membrane (col 15 table, lines 16-47, col 18 lines 13-29) periodically by a select cleaning fluid for a select period (col 11 lines 22-61). The cleaning is between once a day and once a cycle (see fig 6; col 13 lines 50-57) as in instant

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claim 27. The cleaning is carried out to maintain an acceptable permeability of the membrane as in instant claim 28 (col 13 lines 50 – 57, col 18 lines 5-12). The sum of the products of chemical concentration and duration of cleaning could be between 5,000 and 10,000 min.mg/L or equivalent for another cleaning chemical (calculated from fig 4) as in instant claim 29 and 30. Backwashing is done after the permeation step (see col 11 lines 22-61).

Smith does not advocate draining the tank during the cleaning process as in claim 26 (col 10 lines 64-68, col 11 lines 22-30). However, it would be obvious to one of ordinary skill in the art at the time of invention to have the tank drained during or after the cleaning cycle in the Smith process because if the tank is not drained, the permeate may get contaminated with the cleaning fluid (See Smith col 11 lines 46-60).

Response to Arguments

Arguments applicant submitted are not persuasive.

The technical services bulletin attached as appendix A is not considered. This bulletin is not commensurate in scope with the claimed invention because the bulletin describes a procedure for cleaning membranes from the feed side; claims are for cleaning by backwash. Applicant uses this as a reference to determine the concentration of a citric acid solution having pH 2.5; and assumes that because the bulletin describes citric acid solution with pH 2.5 having 7.7 Kg of citric acid in 100 gallons of water, it requires 7.7 Kg of citric acid in 100 gallons of water to obtain pH of 2.5. There is no basis for this assumption because pH is a measure of hydrogen ion concentration (by definition, $\text{pH} = \text{negative logarithm of hydrogen ion concentration}$) and is not directly related to the concentration of citric acid.

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Re the argument that Smith reference does not periodically drain the tank: Smith teaches that draining of the tank is a commonly practiced procedure during cleaning and it is not necessary in his procedure (col 10 lines 59-68; col 11 lines 23-61). Disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments. In re Susi, 440 F.2d 442, 169 USPQ 423 (CCPA 1971). A reference is no less anticipatory if, after disclosing the invention, the reference then disparages it. The question whether a reference "teaches away" from the invention is inapplicable to an anticipation analysis. *Celeritas Technologies Ltd. v. Rockwell International Corp.*, 150 F.3d 1354, 1361, 47 USPQ2d 1516, 1522-23 (Fed. Cir. 1998)

Re argument on the Smith ref exceeding the 20,000 min.mg/L of cleaning agent: Fig 4 of Smith teaches 400 hrs of run, in which cleaning was done with 150 and 300 ppm of chloride measured as hypochlorite ions. Total "CT" parameter for this run for a week is $(2*300*30 + 150*30)(\text{ppm.min}) * 1.45(\text{NaOCl/OCl}) * 168/400(\text{Hrs/week/Hrs}) = 13,702 \text{ min.mg/L}$. If one considers the first week of operation alone from fig 4, this would be only about 9000 min.mg/L. The table in col. 15 gives concentration of OCl^- as 100 ppm for the cleaning fluid, col 15 lines 34-36 gives 10 ppm cleaning fluid as sufficient, and reference to cleaning cycle time as preferably less than 1 hr (col 11 line 32), (and 15 min at numerous places in the specification including fig 6), gives this parameter at less than 10,000 $(10 \text{ ppm OCl}^- (=15 \text{ ppm NaOCl}) * 60 \text{ min.} * 7 \text{ days/week} = \text{about } 6300 \text{ min.mg/L})$.

Re. the argument that Smith reference is teaching only investigative study of different combinations and not any repeat cycle, Fig 4 shows a continuous process for 400 hrs with cleaning at intervals using different concentrations of OCl^- ; and fig 4 shows that the flux is recovered by the

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cleaning, and the total "CT" parameter is within what is claimed by the applicant. Fig 6 shows repeat cycles of once a day of cleaning.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S Menon whose telephone number is 703-305-5999. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L Walker can be reached on 703-308-0457. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

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Krishnan Menon
Patent Examiner
May 5, 2003


W. L. WALKER
SUPERVISORY PATENT EXAMINER
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